

ABSTRACT OF THE DISCLOSURE

In a finite state machine (FSM_{verify}) a set of goal states, to be searched for their reachability from a start state, is defined.

5 An overapproximated path is found from a start state to a goal state by a forward approximation technique. The overapproximated path representation relies upon a partitioning of the state and input bits of FSM_{verify} . A state matrix of the overapproximated path is organized by time-steps of FSM_{verify} along a first dimension and by partitions of FSM_{verify} state bits along a second dimension.

10 An underapproximated path, along the path of the stepping stone matrix, is determined. Underapproximation is typically accomplished by simulation.

A sequence of states to be output is updated with the underapproximated path.

15 If a start to goal state sequence has been found, the procedure ends. Otherwise, the above steps of over and under approximation are repeated, using the results of the last underapproximation as a start state.